IN THE CLAIMS

1. (Amended) An optical storage disc, comprising:

a circular substrate having a first principal surface and an opposing second principal surface;

bumps formed on a first portion of the circular substrate, wherein the bumps represent pre-recorded information;

lands formed on a second portion of the circular substrate; and

a phase-change material deposited on at least the second portion of the substrate, the phase-change material having a first state when unwritten and a second state when written to, wherein information is written only to the phase-change material on the lands, and wherein the data density of the first portion and the second portion is different, and wherein the first and second states are different physical states.

2. (Original) The disc of Claim 1, wherein the first portion has a lower density than the second portion.

3. (Original) The disc of Claim 1, wherein the first portion is on the first principal surface and the second portion is on the second principal surface.

4. (Original) The disc of Claim 3, wherein the first portion has a density of approximately 3.8 Mbits/sqmm, and the second portion has a density of approximately 4.7 Mbits/sqmm.

5. (Original) The disc of Claim 1, wherein the first portion and the second portion are on the second principal surface.

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6. (Original) The disc of Claim 1, wherein the change from the first state to the second state changes both the material structure and optical phase of the phase-change material, and both contributions to the total optical phase of the reflected beam are in the same direction.

7. (Original) The disc of Claim 6, wherein the phase-change material is an alloy of Sb, In, and Sn.

8. (Original) The disc of Claim 1, wherein the optical disc is a first-surface disc.

9. (Original) The disc of Claim 1, wherein the written information is read from the lands, and the pre-recorded information is read from the bumps.

10. (Original) The disc of Claim 1, wherein the outer diameter of the disc is approximately 50 mm or less.

11. (Original) The disc of Claim 10, wherein the outer diameter of the disc is approximately 32 mm or less.

12. (Original) The disc of Claim 1, wherein the thickness of the disc is approximately 0.6 mm or less.

13. (Original) The disc of Claim 1, wherein the phase-change material is also deposited on the first principal surface of the substrate.

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14. (Original) The disc of Claim 1, wherein the phase-change material in the second state has a higher reflectivity than in the first state.

15. (Original) The disc of Claim 1, wherein the substrate comprises a polycarbonate material.

16. (Currently amended) An optical storage disc, comprising:

a circular substrate having a first surface and an opposing second surface;

a pre-recorded portion comprising bumps and planar regions;

a writable portion, separate from the pre-recorded portion, comprising lands, the writable portion having a higher storage capacity than the pre-recorded portion; and

a phase-change material formed over the bumps and lands, wherein information is written only on the lands, and wherein the phase-change material changes physical states when exposed to energy.

17. (Original) The disc of Claim 16, wherein the pre-recorded portion and the writable portion are on different surfaces of the substrate.

18. (Original) The disc of Claim 16, wherein mastered information is stored in the form of bumps.

19. (Original) The disc of Claim 16, wherein the phase-change material is in a first state when unwritten to and in a second state when written to.

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20. (Original) The disc of Claim 19, wherein the first state is an amorphous state, and the second state is a crystalline state.

21. (Original) The disc of Claim 19, wherein the change from the first state to the second state changes both the material structure and optical phase of the phase-change material, and both contributions to the total optical phase of the reflected beam are in the same direction.

22. (Original) The disc of Claim 21, wherein the change to the material structure decreases the thickness of the phase-change material and the change to the optical phase increases the optical path length of light reflected from the phase-change material.

23. (Currently amended) A method of manufacturing an optical disc, comprising:

forming bumps and planar regions on first portions of a substrate;

forming lands on second portions of the substrate, wherein the storage capacity of the second portions is higher than the first portions; and

depositing a phase-change material over at least the lands, wherein prerecorded information is read from the bumps and written information is written only to and read from the phase-change material deposited on the lands, and wherein the phase-change material changes physical states when exposed to energy.

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24. (Original) The method of Claim 23, wherein the phase-change material is in a first state when unwritten and in a second state after being written to.

25. (Original) The method of Claim 24, wherein the second state has a different thickness and optical phase than the first state.

26. (Original) The method of Claim 25, wherein the thickness contributes to the phase in the second state.

27. (Original) The method of Claim 26, wherein the change from the first state to the second state changes both the material thickness and the optical phase of the phase-change material in the same direction.

28. (Original) The method of Claim 23, further comprising writing information to the phase-change material on the lands.

29. (Original) The method of Claim 28, wherein the writing is performed using a laser at a wavelength of approximately 650 nm.

30. (Original) The method of Claim 28, wherein the writing changes the phase-change material from a first amorphous state to a second crystalline state.

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